

WHAT IS CLAIMED IS:

1. A lubricant for die lubrication used during compaction pressure of a powder with a die while the lubricant is adhered by electrification to the surface of the die, the lubricant comprising a mixed powder of at least two different lubricants each having a melting point higher than a predetermined temperature of the compaction pressure.

5
2. The lubricant for die lubrication according to claim 1, wherein the at least two different lubricants each having a melting point higher than the predetermined temperature of the compaction pressure are at least two materials selected from the following groups:

- 10
group A: metallic soaps;
group B: polyethylenes;
group C: amide-based waxes;
group D: polyamides;
group E: polypropylenes;
group F: polymers comprised of acrylic acid esters;
group G: polymers comprised of methacrylic acid esters;
group H: plastics including fluorine; and
group I: lubricants having layered crystal structures.

15
20
3. The lubricant for die lubrication according to claim 2, wherein the die is a preheated die.

4. The lubricant for die lubrication according to claim 1, wherein the die is a preheated die.

25
5. A method of manufacturing a high-density iron-based powder compact, comprising:
placing an iron-based mixed powder into a die; and
pressure molding the iron-based mixed powder at a predetermined temperature,

30
wherein the die has the surface on which a lubricant for die lubrication is adhered by electrification, and a mixed powder comprising at least two different

lubricants each having a melting point higher than the predetermined temperature of the compaction pressure is used as the lubricant for die lubrication.

6. The method of manufacturing a high-density iron-based powder compact according to claim 5, wherein the at least two different lubricants each having a melting point higher than a predetermined temperature of the compaction pressure are at least two materials selected from the following groups:

- 5 group A: metallic soaps;
- 10 group B: polyethylenes;
- 15 group C: amide-based waxes;
- group D: polyamides;
- group E: polypropylenes;
- group F: polymers comprised of acrylic acid esters;
- group G: polymers comprised of methacrylic acid esters;
- group H: plastics including fluorine; and
- group I: lubricants having layered crystal structures.

7. The method of manufacturing a high-density iron-based powder compact according to claim 6, comprising preheating the die and the iron-based mixed powder before the iron-based mixed powder is placed in the die.